

THAT WHICH IS CLAIMED:

1. A cementitious composition for mixing with an effective amount of water to form a structural product, the composition consisting essentially of:

5 an effective amount of bottom ash; and  
an effective amount of cement.

2. A composition according to Claim 1 wherein the structural product formed from mixing the composition with the effective amount of water has at least one of a  
10 seven-day compressive strength of at least about 2,500 psi and a twenty-eight-day compressive strength of at least about 4,000 psi.

3. A composition according to Claim 1 wherein the structural product formed from mixing the composition with the effective amount of water has at least one of a  
15 seven-day compressive strength of at least about 4,000 psi and a twenty-eight-day compressive strength of at least about 5,000 psi.

4. A composition according to Claim 1 wherein the structural product formed from mixing the composition with the effective amount of water has at least one of a  
20 seven-day compressive strength of at least about 5,000 psi and a twenty-eight-day compressive strength of at least about 6,000 psi.

5. A composition according to Claim 1 wherein the composition has a per unit volume weight of less than about 100 pounds per cubic foot of volume.  
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6. A composition according to Claim 1 comprising bottom ash and cement in a ratio of between about 2:1 and about 2:3.

7. A composition according to Claim 1 wherein said bottom ash has a  
30 particle size less than about .75 inches.

8. A composition according to Claim 1 wherein approximately fifty percent of said bottom ash has a particle size less than about .012 inches.

5 9. A cementitious composition for mixing with an effective amount of water to form a structural product, the composition comprising:  
an effective amount of bottom ash;  
an effective amount of cement; and  
wherein the composition has a per unit volume weight of less than about 100 pounds per cubic foot of volume and wherein the structural product formed from mixing  
10 the composition with the effective amount of water has a seven-day compressive strength of at least about 2,500 psi.

10. A composition according to Claim 9 wherein the composition has a per unit volume weight of less than about 90 pounds per cubic foot of volume.

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11. A composition according to Claim 9 wherein the structural product formed from mixing the composition with the effective amount of water has a seven-day compressive strength of at least about 4,000 psi.

20 12. A composition according to Claim 9 wherein the structural product formed from mixing the composition with the effective amount of water has a seven-day compressive strength of at least about 5,000 psi.

25 13. A composition according to Claim 9 wherein the structural product formed from mixing the composition with the effective amount of water has a twenty-eight-day compressive strength of at least about 5,000 psi.

30 14. A composition according to Claim 9 wherein the structural product formed from mixing the composition with the effective amount of water has a twenty-eight-day compressive strength of at least about 6,000 psi.

15. A composition according to Claim 9 comprising bottom ash and cement in a ratio of between about 2:1 and about 2:3.

5 16. A composition according to Claim 9 wherein said bottom ash has a particle size less than about .75 inches.

17. A composition according to Claim 9 wherein approximately fifty percent of said bottom ash has a particle size less than about .012 inches.

10 18. A high strength cementitious composition for mixing with an effective amount of water to form a structural product, the composition consisting of:  
an effective amount of bottom ash; and  
an effective amount of cement.

15 19. A composition according to Claim 18 wherein the structural product formed from mixing the composition with the effective amount of water has at least one of a seven-day compressive strength of at least about 2,500 psi and a twenty-eight-day compressive strength of at least about 4,000 psi.

20 20. A composition according to Claim 18 wherein the structural product formed from mixing the composition with the effective amount of water has at least one of a seven-day compressive strength of at least about 4,000 psi and a twenty-eight-day compressive strength of at least about 5,000 psi.

25 21. A composition according to Claim 18 wherein the structural product formed from mixing the composition with the effective amount of water has at least one of a seven-day compressive strength of at least about 5,000 psi and a twenty-eight-day compressive strength of at least about 6,000 psi.

22. A composition according to Claim 18 wherein the composition has a per unit volume weight of less than about 100 pounds per cubic foot of volume.

23. A composition according to Claim 18 comprising bottom ash and cement  
5 in a ratio of between about 2:1 and about 2:3.

24. A composition according to Claim 18 wherein said bottom ash has a particle size less than about .75 inches.

10 25. A composition according to Claim 18 wherein approximately fifty percent of said bottom ash has a particle size less than about .012 inches.

26. A cementitious product for mixing with an effective amount of water to form a structural product, comprising  
15 a container having a volume;  
a cementitious composition substantially filling the volume of said container, said composition comprising:  
an effective amount of bottom ash;  
an effective amount of cement; and  
20 wherein said container and said composition together weigh less than approximately 100 pounds per cubic foot of volume.

27. A product according to Claim 26 wherein said container and said composition weigh less than approximately 90 pounds per cubic foot of volume.  
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28. A product according to Claim 26 wherein the structural product formed from mixing said cementitious composition of the product with the effective amount of water has at least one of a seven-day compressive strength of at least about 2,500 psi and a twenty-eight-day compressive strength of at least about 4,000 psi.  
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29. A product according to Claim 26 wherein the structural product formed from mixing said cementitious composition of the product with the effective amount of water has at least one of a seven-day compressive strength of at least about 4,000 psi and a twenty-eight-day compressive strength of at least about 5,000 psi.

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30. A product according to Claim 26 wherein said composition comprises bottom ash and cement in a ratio of between about 2:1 and about 2:3.

31. A product according to Claim 26 wherein said bottom ash has a particle  
10 size less than about .75 inches.

32. A product according to Claim 26 wherein approximately fifty percent of said bottom ash has a particle size less than about .012 inches.

33. A product according to Claim 26 wherein said container is selected from  
15 the group consisting of a paper bag, a plastic bag, and a plastic bucket having a lid.

34. A method of manufacturing a cementitious product for use in forming a structural product, comprising:

20 providing a cementitious composition comprising an effective amount of bottom ash and an effective amount of cement; and

packaging the composition in a container wherein the container and the composition together weigh less than approximately 100 pounds per cubic foot of volume.

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35. A method according to Claim 34 wherein said providing step comprises mixing the effective amount of bottom ash with the effective amount of cement.

36. A method according to Claim 34 wherein said mixing step comprises  
30 removing particles from the bottom ash having a particle size exceeding about .75 inches.

37. A method according to Claim 34 wherein said mixing step comprises mixing two substantially equally weighted portions of bottom ash, the first portion of bottom ash comprising particles having particle sizes ranging from between about .75 inches to about .003 inches, and the second portion of bottom ash comprising particles  
5 having particle sizes less than about .006 inches.

38. A method according to Claim 34 wherein said mixing step comprises mixing the bottom ash and cement in a ratio of between about 2:1 and about 2:3.

10 39. A method according to Claim 34 wherein said packaging step comprises packaging the composition in a container wherein the container and the composition together weigh less than approximately 90 pounds per cubic foot of volume.

40. A method according to Claim 34 wherein said packaging step comprises  
15 packaging the composition in a container wherein the container is selected from the group consisting of a paper bag, a plastic bag, and a plastic bucket having a lid.

41. A method of making a structural product, comprising:  
providing a cementitious composition comprising an effective amount of bottom  
20 ash and an effective amount of cement;  
mixing an effective amount of water with the cementitious composition; and  
subsequent to said mixing step, curing the cementitious composition to thereby form a structural product having at least one of a seven-day compressive strength of at least about 2,500 psi and a twenty-eight-day compressive strength of at least about 4,000  
25 psi.

42. A method according to Claim 41 wherein said curing step comprises curing the cementitious composition to thereby form a structural product having at least one of a seven-day compressive strength of at least about 4,000 psi and a twenty-eight-  
30 day compressive strength of at least about 5,000 psi.

43. A method according to Claim 41 wherein said curing step comprises curing the cementitious composition to thereby form a structural product having at least one of a seven-day compressive strength of at least about 5,000 psi and a twenty-eight-day compressive strength of at least about 6,000 psi.